

TO: INSPECTION SERVICES DIVISION
DIVISION OF ENVIRONMENTAL MANAGEMENT

FROM: HEALTH DEPARTMENT/ENVIRONMENTAL SERVICES SECTION

RE: NOTIFICATION OF ISSUANCE OF SEPTIC TANK PERMIT AND/OR
WELL PERMIT

DATE: JULY 2, 1998

OWNER'S NAME: CASCADES ASSOC. L.P.

FILE 1958

BUILDING APPLICATION NUMBER: 98180B0550

SUBDIVISION: CASCADES ESTATES SEC: 12A BLOCK: LOT: 5

TAX MAP IDENTIFICATION: 2-2-003-5

PROPERTY ADDRESS: 11430 WOOLINGTON ROAD, GREAT FALLS VIRGINIA 22066

HEALTH DEPARTMENT PERMIT # : 129-98-0839

PERMIT ISSUED FOR: ☒ SEWAGE DISPOSAL ☐ WELL ☐ OTHER

TO SERVE: ☒ RESIDENTIAL ☐ COMMERCIAL ☐ OTHER DESCRIBE:

SEWAGE DISPOSAL SYSTEM DESIGNED FOR FOUR BEDROOMS OR 600 GPD
(ALL PERMITS FOR DWELLING ARE DESIGNED TO INCLUDE AUTOMATIC WASHER AND GARBAGE DISPOSAL)

REMARKS:

THE ABOVE TO BE FAXED TO PERMITS BRANCH AND ORIGINAL TO BE ATTACHED WITH PERMIT.

NOTIFICATION OF FINAL APPROVAL:

SEWAGE DISPOSAL SYSTEM

WATER SUPPLY SYSTEM

APPROVED: 4-1-1999

APPROVED: PUBLIC

UPON FINAL APPROVAL, ONE COPY TO BE FAXED TO COMBINATION INSPECTION BRANCH, ORIGINAL TO BE ATTACHED ON TOP OF FILE

ENTERED
CB

NUMBER OF BEDROOMS AT FINAL INSPECTION: 4
STICKER PLACED: 4-1-99 INITIALS: J.N.O.

** FDV (CHECK ONE) ☒ YES ☐ NO

FHD-EH-3 REV. 5/98

SPECIAL HANDLING

Commonwealth of Virginia



HD Number:
129-98-0839

Fairfax County
DEPARTMENT OF HEALTH SERVICES
PERMIT



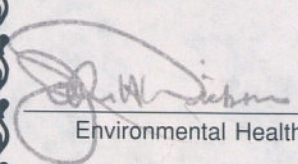
Sewage Disposal System Operation Permit

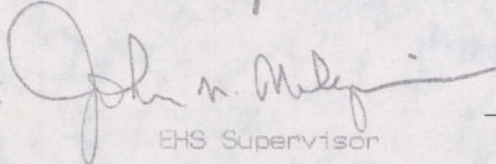
Date of Issue:

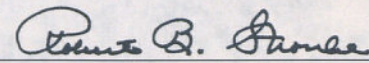
4/1/99

TO: CASCADES ASSOC.. L.P.
11430 WOOLINGTON RD
GREAT FALLS.VA
22066-

The above operator has made application and in accordance with the regulations of the Board of Health of the Commonwealth of Virginia is authorized by the Fairfax County Health Department to operate an Individual Onsite Sewage Disposal System with an actual or estimated water use of 600 GPD for a 4 bedroom dwelling.

 R.E.H.S., C.P.S.S.
Environmental Health Specialist


EHS Supervisor


Robert B. Stroube, M.D., M.P.H.
Director of Health Services

This permit must be displayed in a conspicuous location. Permit is non-transferrable.

Completion Statement

Commonwealth of Virginia
State Department of Health

Health Department
Identification Number 129-98-0839

Fairfax Co. Health Department

Name of Company/Corporation/Individual: Holt's Sons Excavating

Address: _____ Telephone: 689 1066

Owner's Name Cascades Assoc

Owner's Address 8614 Westwood Cir. W. V. 22182

Location of Installation: Lot 5 Block 12A

Section: 12A Subdivision: Cascades Ests.

Other: 11430 WOOLINGTON RD, 6th Falls

I hereby certify that the onsite sewage disposal system has been installed and completed in accordance with the construction permit issued (date) 1-14-99 and is in compliance with Part D of the Sewage Handling and Disposal Regulations and when appropriate the plans and specifications for the project.

4-1-99
Date

[Signature]
Signature and Title

Water Supply and/or Sewage Disposal System Construction Permit

Commonwealth of Virginia

Department of Health

FAIRFAX COUNTY

Health Department

Health Department

Identification Number

Map Reference

129-98-0839

2-2-003-5

General Information

Water Supply System: New ☐ Repair ☐ Public ☒ FHA ☐ VA ☐ Case No. _____

Sewage Disposal System: New ☒ Repair ☐ Expanded ☐ Conditional ☐ Public ☐

Based on the application for a sewage disposal system construction permit filed in accordance with Section 2.13 E, of the Sewage Handling and Disposal Regulations and/or Section 2.13 of the Private Well Regulations a construction permit is hereby issued to:

Owner CASCADES ASSOCIATES

Telephone 442-8992

Address 8614 WESTWOOD CTR DR, VIENNA 22182

For a Type II

Sewage Disposal System or Well to

be constructed on/at 11430 WOOLINGTON ROAD, GREAT FALLS, VIRGINIA 22066

Subdivision CASCADES ESTATES

Section/Block 12A

Lot 5

Actual or estimated water use 600 gpd

FOUR BEDROOM (4) = DESIGN

NOTE: SEWAGE DISPOSAL SYSTEM INSPECTION RESULTS

Water supply, existing: (describe) _____

Water supply location: Satisfactory yes ☐ no ☐ comments _____

To be installed: class PUBLIC

Completion Report _____

cased N/A grouted N/A

G. W. 2 Received: yes ☐ no ☐ not applicable ☒

Building sewer:

Building sewer: yes ☒ no ☐ comments _____

4" I.D. PVC Schedule 40, or equivalent.

Satisfactory

Slope 1.25" per 10' (minimum).

☒ Other 1/4" per foot fall

Connected

Septic tank: Capacity 1200 gals. (minimum).

Pretreatment unit: yes ☐ no ☐ comments _____

☐ Other _____

Satisfactory MFC: TADP Cal: 1250 FT

Inlet-outlet structure:

Inlet-outlet structure: yes ☒ no ☐ comments _____

PVC Schedule 40, 4" tees or equivalent.

Satisfactory

☐ Other _____

1 1/4" had to be read once.

Pump and pump station:

Pump & pump station: yes ☐ no ☐ comments _____

No ☐ Yes ☒ describe and show design.

Satisfactory

if yes: AS PER PUMP PLANS APPROVED 7-2-98

MFC: TADP Cal: 1125

Gravity mains: 3" or larger I.D., minimum 6" fall per 100', 1500 lb. crush strength or equivalent.

Conveyance method: yes ☒ no ☐ comments _____

☒ Other FEOW DIVERSTON VALVE (FDV)

Satisfactory Type Bull Run Set # 1 Lower 2F

Distribution box:

Distribution box: yes ☒ no ☐ comments _____

Precast concrete with 6 ports. @ box

Satisfactory

☒ Other 2 Boxes

Type: PE dams: DAF

Header lines:

Header lines: yes ☐ no ☐ comments _____

Material: 4" I.D. 1500 lb. crush strength plastic or equivalent from distribution box to 2' into absorption trench. Slope 2" minimum.

Satisfactory

☐ Other _____

Percolation lines:

Percolation lines: yes ☒ no ☐ comments _____

Gravity 4" plastic 1000 lb. per foot bearing load or equivalent, slope 2" 4" (min. max.) per 100'.

Satisfactory

☒ Other 6 lines @ 60'; perc.: 10 rate @ 48"

Absorption trenches:

Absorption trenches: yes ☐ no ☐ comments _____

Square ft. required 720; depth from ground surface to bottom of trench 48"; aggregate size 3" to 1 1/2";

Satisfactory

Trench bottom slope 2" to 4" per 100'; trench width 2';

BF: 10" - 14" FG: _____

center to center spacing 23'; trench length 60';

Date 4-1-99 Inspected and approved by: _____

Depth of aggregate 20"; Number of trenches 6

John M. Miley REHS

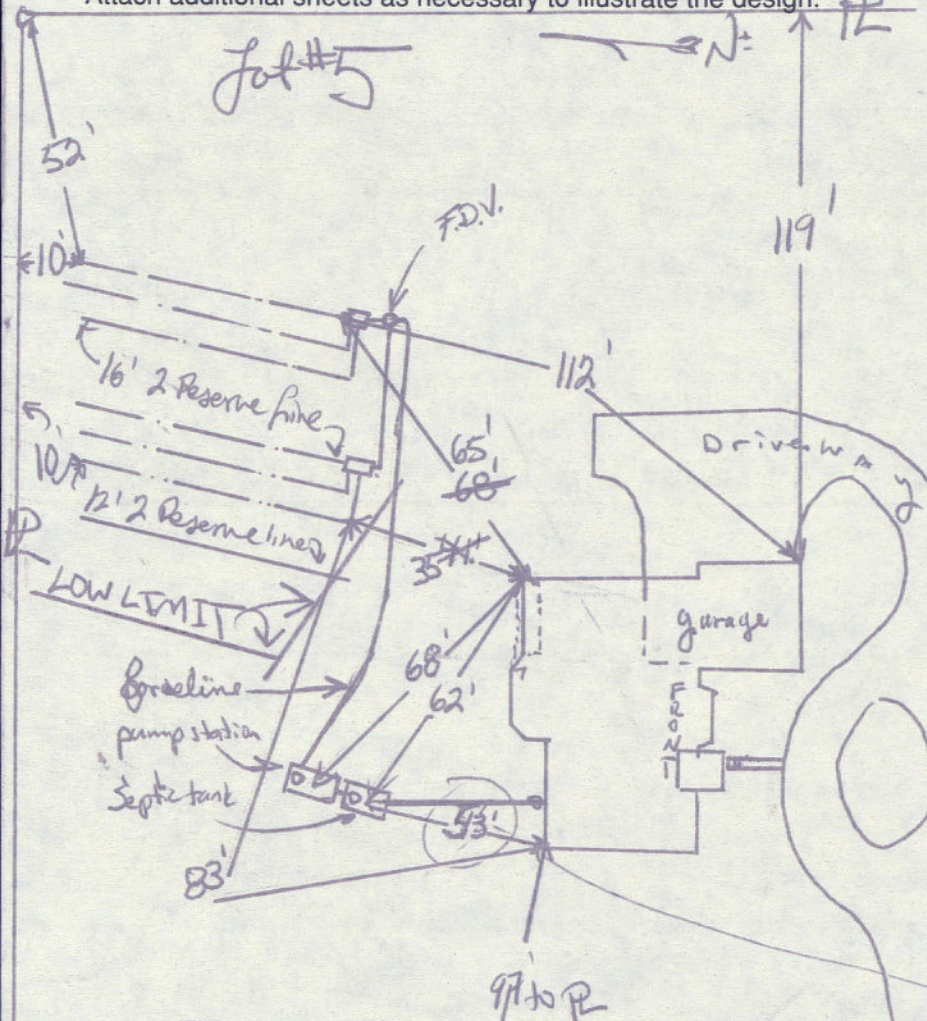
Trench length 60'; Number of trenches 6

Sanitarian

Schematic drawing of sewage disposal and/or water supply system and topographic features.

Show the lot lines of the building site, sketch of property showing any topographic features which may impact on the design of the well or sewage disposal system, including existing and/or proposed structures and sewage disposal systems and wells within 200 feet. The schematic drawing of the well site or area and/or sewage disposal system shall show sewer lines, pretreatment unit, pump station, conveyance system, and subsurface soil absorption system, reserve area, etc. When a nonpublic drinking water supply is to be permitted, show all sources of pollution within 200 feet. **NOT TO SCALE**

- ☒ The information required above has been drawn on the attached copy of the sketch submitted with the application.
Attach additional sheets as necessary to illustrate the design.



1. Grade per site plan approved by this office.
2. Install system as shown; a minimum of 10' from trees, property line and utility lines.
3. Maximum backfill over system is not to exceed 20\"
4. It is the contractors responsibility to meet all OSHA regulations relating deep excavations.
5. House sewer line must be inspected by this Department to a point 5' from the dwelling.
6. Flow Diversion Valve (FDV) key must be provided to owner prior to occupancy.
7. UPON COMPLETION OF FINAL GRADING AND WELL (if applicable), CALL THIS OFFICE (246-2201) FOR FINAL INSPECTION(S) A MINIMUM OF 30 DAYS PRIOR TO REQUEST FOR RESIDENTIAL USE PERMIT.
8. Install system in accordance with all applicable State Regulations and County Code.
9. Install an access manhole on the outlet port of the septic tank for inspection and sludge removal. The manhole must have a removable water tight and air tight cover installed flush with or above the ground surface and marked as sewer.
10. Section 68-1-29 of the Fairfax County Code requires pumping of the septic tank once every five years. The owner of the property is required to provide written notification and proof to this Department each time the tank is pumped.
11. Septic Tank and Pump Chamber Moved 2/2/99 to SS area 915

This sewage disposal system and/or water supply is to be constructed as specified by the permit X or attached plans and specifications.

NOTE LOW LIMITS

This sewage disposal system and/or well construction permit is null and void if (a) conditions are changed from those shown on the application (b) conditions are changed from those shown on the construction permit.

No part of any installation shall be covered or used until inspected, corrections made if necessary, and approved, by the local health department or unless expressly authorized by the local health dept. Any part of any installation which has been covered prior to approval shall be uncovered, if necessary, upon the direction of the Department.

Date: 1-14-99 Issued by: John A. Dickson II REHS

Sanitarian

Date: 1-19-1999 Reviewed by: John A. Dickson II REHS

Supervisory Sanitarian

This Construction
Permit Valid until

6, 2000

If FHA or VA financing

Reviewed by Date

Date

File

Map

Grid

Sub

Block

Lot

Phone #

Subdivision

INITIALS

3/24/99
(cont)

contractor was not able to fill
chamber for float/drawdown test.
David Hott will reschedule pump
insp. Hard Run

Hard Rm 13

2

4-1-99

Pumps + FG INSPECTION SATISFACTORY

OK to Approve S.D.S.

PUBLIC WATER

FILE
C

THD

PERMIT # 129-98-0839

TM: 2-2-003-5

LOCATION CASCADES ESTATES SEC. 12A LOT-5
Subdivision or Tax Map Ref.

PART I WATER SUPPLY INSPECTION REPORT (To Supplement LHS-143)

Well Installed By _____ Pump Installed By _____

I. GROUT INSPECTED..... Date _____ Sanitarian _____

II. PIPE & ELECTRIC WIRE FROM WELL TO STORAGE TANK APPROVED Date _____ Sanitarian _____

III. TYPE OF INSTALLATION: ☒ PITLESS ADAPTOR ☐ PIT ☐ SURFACE
(4" Drain) (Drain) Date _____ Sanitarian _____

IV. STORAGE TANK..... Date _____ Sanitarian _____

Gate Valve _____ Sample Tap and Elec. Dis. Switch _____
Check Valve _____ Backflow Preventer _____ Press. Relief Valve _____

V. INITIAL WATER SAMPLE COLLECTED..... Date _____ Sanitarian _____

DATE RECORD OF ADDITIONAL REMARKS OR VISITS DISPOSITION SANITARIAN

1/12/99	PROPERTY LINES and D.F. Staked correctly, bump-out back of dwelling - slight change.	Hold	
	OK to issue S.D.S. permit.	S.D.S.	214.2
2/2/99	BLDR + Owner request to move tanks Permit amended + fixed today	10' ± away from dwelling. OK	214.2

PART II SEWAGE DISPOSAL SYSTEM INSPECTION REPORT (To Supplement LHS-141)

DATE RECORD OF REMARKS AND VISITS DISPOSITION SANITARIAN

2-5-99	Contractor cancelled inspection - reschedule	Hold	214.2
2-9-99	ENTIRE S.D.S., including forceline OK to ISF	Hold pump + fl.	214.2
2-19/99	Kathy Hatt cancelled pump & FG Insp + will reschedule	Hold pumps	OK
3-11-99	FG not ready, NO show by Hatt + sons, it does not appear that complete wiring of SDS pumps/controller has been done, contractor must reschedule	Hold pumps/Brv/ FG	214.2
3/24/99	FG still rough. Electrician was just finishing connecting pump chamber at time of insp, 99	(cont)	

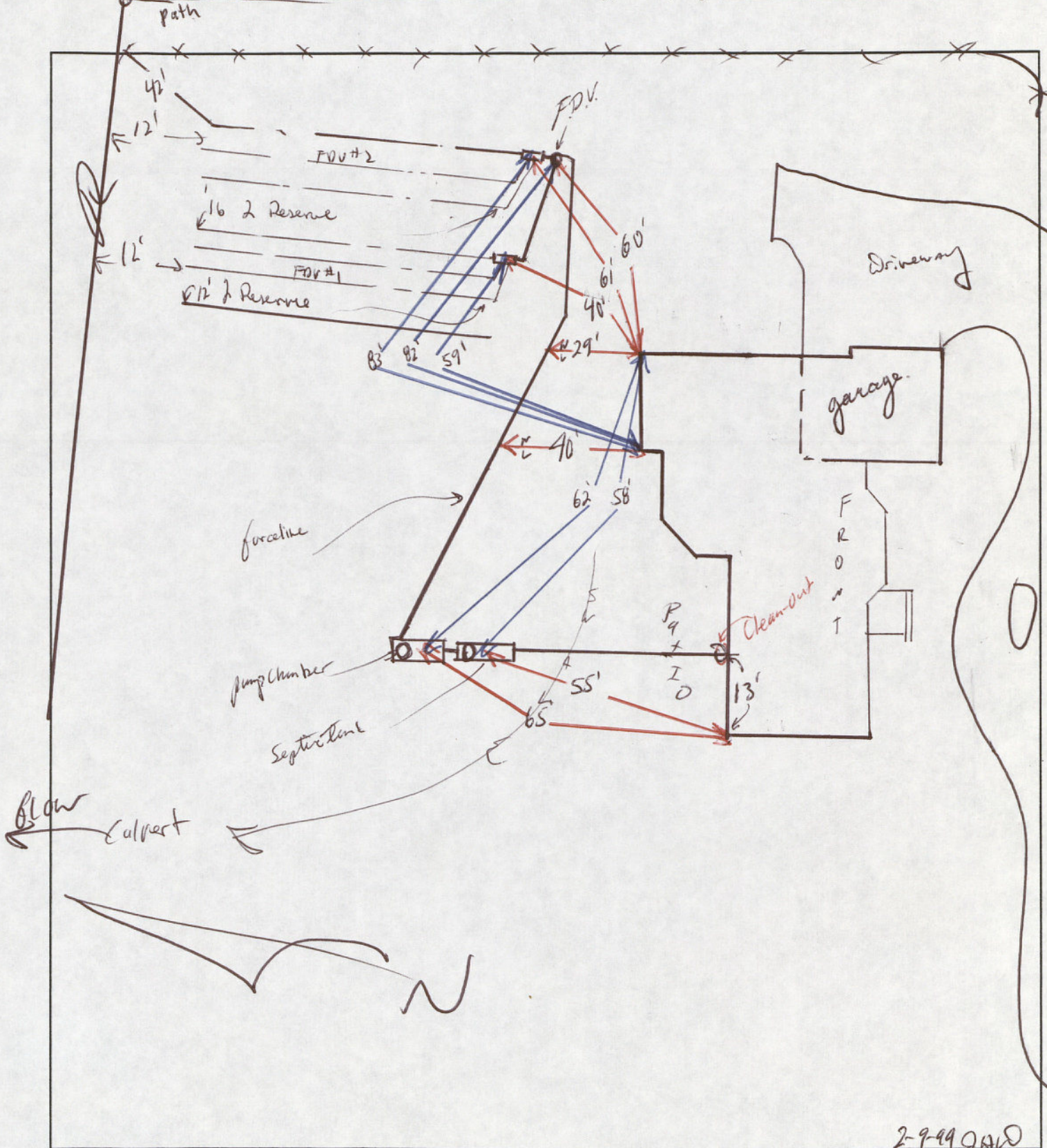
FAIRFAX COUNTY HEALTH DEPARTMENT
SEWAGE DISPOSAL SYSTEM/WELL WATER SUPPLY AS-BUILT

Tax Map ID: 2-2-003-5

Street Address: 11430 WOOLINGTON ROAD

Subdivision: CASCADES ESTATES SECTION 12A

City, State, Zip: GREAT FALLS, VIRGINIA 22066



FAIRFAX COUNTY HEALTH DEPARTMENT

PERMIT APPLICATION

MARK ALL APPLICABLE BOXES:

☒ NEW CONSTRUCTION () SEWAGE DISPOSAL SYSTEM PERMIT () INDIVIDUAL WELL WATER SUPPLY PERMIT
 () ADDITION/REMODELING () WELL ABANDONMENT () SEWAGE DISPOSAL SYSTEM EXPANSION

TO BE COMPLETED BY THE APPLICANT PLEASE PRINT CLEARLY

OWNER Cascades Assoc L P ADDRESS 8614 Westwood Cir Dr PHONE 442-8992
Vienna ZIP 22182
 AGENT NVD5/Mary Chryst ADDRESS 1301 Moran Rd. PHONE 430-7135
Stelling ZIP 20166
 SUBDIVISION Cascades Estates SECTION 12A BLOCK _____ LOT 5
 PROPERTY ADDRESS 11430 Woolington Rd. TAX MAP 002-2-03-0005
Great Falls VA 22066

☒ RESIDENTIAL

Sewage: ☒ Septic Tank () Public () Other _____ () Basement - Plumbing in Basement () Yes () No
 Number of Potential Bedrooms 4

Water: () Well ☒ Public () Other _____

() COMMERCIAL

Sewage: () Septic Tank () Public () Other _____ Estimated Number of Patrons _____ Number of Employees _____
 Estimated Daily Water Usage _____ Gallons

Water: () Well () Public () Non-Community () Other _____

DESCRIBE ADDITION/REMODELING: _____

I GIVE PERMISSION TO THE HEALTH DEPARTMENT TO ENTER ONTO THE PROPERTY DESCRIBED FOR THE PURPOSE OF PROCESSING THIS APPLICATION. I UNDERSTAND A SUBSTANTIAL PHYSICAL CHANGE TO THE PROPERTY MAY VOID APPROVAL OF THE LOT FOR AN ONSITE SEWAGE DISPOSAL SYSTEM.

SIGNATURE Mary Chryst PRINT NAME Mary Chryst
 DATE 6-30-98 () OWNER ☒ AGENT

For Department Use Only

HD:ID:NO: 129-98-0839

Date Lot Approved: 3-30-98 Type System II Design for 4 Bedrooms or 600 Gallons per Day
 Perc Rate 10 Depth 48 Septic Tank Gallons 1200 Absorption Field 360 (Lin. Ft.) Reserve Area 180 (Lin. Ft.)
 Building Permit Number 98180B0550 Receipt Number SP21D
 Remarks SAS approved for occupancy 4-1-99 J. Dickson

REVIEWED BY PJ

TITLE EH54

DATE 7-2-98

OFFICE USE ONLY:

TO BE COMPLETED FOR ADDITION/REMODELING:

(R) RESIDENTIAL

Number of bedrooms ____ design, Number of bedrooms ____ added; Number of bedrooms ____ total.

(C) COMMERCIAL

Type of facility _____

Number of Employees: Existing _____; Proposed/Added _____; Total _____

Estimate daily water usage: Existing _____; Proposed _____; Total _____

(A/R) ADDITION/REMODELING

Plan of proposed Addition/Remodeling reviewed? Yes / No

DESCRIBE ADDITION/REMODELING _____

Sewage Disposal: Public _____ On-Site _____ Other _____

If On-Site: Type I _____ II _____ III _____ IV _____

Existing SDS permit on file: Yes / No ; Date SDS Approved: _____

Is notification required to existing SDS for addition/remodeling? Yes / No

If yes, give details: _____

Existing WSS permit of file: Yes / No; Date WSS Approved _____

Type (specify): _____ Public: _____

Is modification/abandonment required to existing WSS for addition/remodeling? Yes / No;

If yes, give details: _____

Field check required before further processing: Yes / No

Addition/remodeling approved: Yes / No

SEWAGE PUMP INSPECTION RECORD

 PERMIT # 98-0839

 PLANS APPROVED 7/2/98

 LOCATION: 11436 WASHINGTON RD

 TAX MAP #: 2-2-003-5

ITEM	PER PLANS	PER INSPECTION	DATE/INITIAL	REMARKS
1. IS PUMP CHAMBER 12" ABOVE GRADE AND PROPERLY GRADED?	☒ YES ☐ NO	YES / NO	4/1/99 JD	
2. IS ELECTRICAL JUNCTION BOX ABOVE GRADE?	☒ YES ☐ NO	YES / NO		
3. DIAMETER OF PUMP CHAMBER	IN.	1000 1125 IN.		
4. IS CONSTRUCTION OF CHAMBER SATISFACTORY?	YES / NO	☒ YES ☐ NO		
5. MAKE AND MODEL NUMBER OF PUMPS *SEE NOTE BELOW		Myers M50		
6. CHECK VALVES PROPERLY LOCATED (TYPE OF MATERIAL PROPOSED)	☒ YES ☐ NO	☒ YES ☐ NO		MATERIAL INSTALLED: 15mm
7. FORCE LINE (SIZE/MATERIAL/ DEPTH)	2" PVC 724"	2" PVC 24"	2/19/99	
8. FLOATS (TYPE/NUMBER/ SUSPENSION)	MC 3 4/16"	MC 3 4/16"		
9. DISTANCE OVERRIDE BELOW INLET	17.4 IN.	17.4" IN.		
10. DISTANCE ALARM BELOW INLET	17.4 IN.	17.4" IN.		
11. HEIGHT OF "OFF" FLOAT ABOVE FLOOR	24" IN.	24" IN.		
12. DRAWDOWN BETWEEN ON & OFF FLOOR	4.6" IN.	4.6" IN.		
13. CHAMBER LID SEALED	☒ YES ☐ NO	☒ YES ☐ NO		
14. CONTROL PANEL (MAKE & MODEL #)				Myers PNL
(A) IS ALARM ON SEPARATE CIRCUIT?	☒ YES ☐ NO	☒ YES ☐ NO		
(B) DOES OVERRIDE FUNCTION PROPERTY?	☒ YES ☐ NO	☒ YES ☐ NO		
(C) DOES ALTERNATOR FUNCTION PROPERLY?	☒ YES ☐ NO	☒ YES ☐ NO		
(D) ARE PUMPS INDIVIDUALLY PROTECTED BY SEPARATE CIRCUIT BREAKERS?	☒ YES ☐ NO	☒ YES ☐ NO		
15. 6" SOLID CONCRETE BLOCK UNDER EACH PUMP OR EQUIVALENT CONSTRUCTION?	☒ YES ☐ NO	☒ YES ☐ NO		

*NOTE: THIS STATEMENT MUST BE COMPLETED AND SIGNED:

I, How & Sons Excavating, DO HEREBY CERTIFY THAT THE SEWAGE PUMPS INSTALLED ON
(PRINT NAME OF SDS CONTRACTOR)

THIS LOT ARE Myers M50 AND THAT THE PUMP IS
(MAKE AND MODEL NUMBER)

CONSTRUCTED IN ACCORDANCE WITH APPROVED PLANS.

4-1-99
DATE

[Signature]
SIGNATURE OF SEWAGE DISPOSAL CONTRACTOR OR AUTHORIZED AGENT

4-1-99
DATE

[Signature]
ENVIRONMENTAL HEALTH SPECIALIST

RECEIVED JUN 10 1998

FAIRFAX COUNTY DIVISION OF ENVIRONMENTAL HEALTH
SEWAGE EFFLUENT PUMP CALCULATIONS

Plans prepared by: URBAN ENG + ASSOC Permit Holders Name: CAMBRIDGE HOMES.
Address: 7712 LITTLE RIVER TRF Property Address: 4142 WOOLINGTON RD.

Phone: 703-642-8080 Subdivision: CASCADES 12 A
Date: 6-22-98 No. of Bedrooms: 4 Tax Map I.D. 002-2-1-104-P5

1. 180 number linear feet ($\frac{1}{2}$ total linear feet shown on permit) to be dosed
each cycle times .65 gallons per foot of 4" ID pipe times
85% equals gallons pumped per cycle (includes reserve capacity)

2. 97.45 number of gallons to be pumped each cycle.

3. 1125 Tank size 1125 Gallons.

Note: An electrical permit is required
for installation

4. 21.6 gallons per inch of tank

5. 4.10 inches drawdown per cycle

6. 375.84 gallons storage (1/4 day required above high water alarm)

7. 9.93 feet of static lift

8. 2" inches diameter of discharge pipe (2" minimum PVC)

9. 95 feet length of run of discharge pipe

10. 59.2 feet equivalent length of pipe

11. 14.9 feet of TDH at 40 g.p.m. minimum

12. 25.6 feet of TDH at 80 g.p.m. maximum

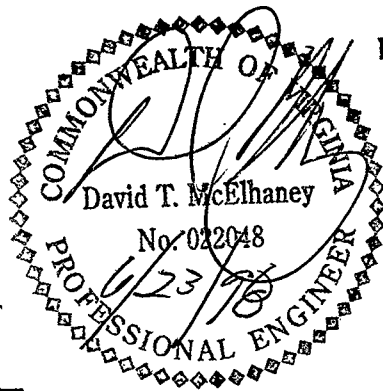
13. Drawdown time: 2 minutes 29.18 seconds at 40 g.p.m.;
1 minutes 14.59 seconds at 80 g.p.m..

14. Recommended pump: #1 Make HYDROMATIC Model # SPD-50H
72 g.p.m. at 23 feet TDH
115 volts 1 phase 1/2 horsepower

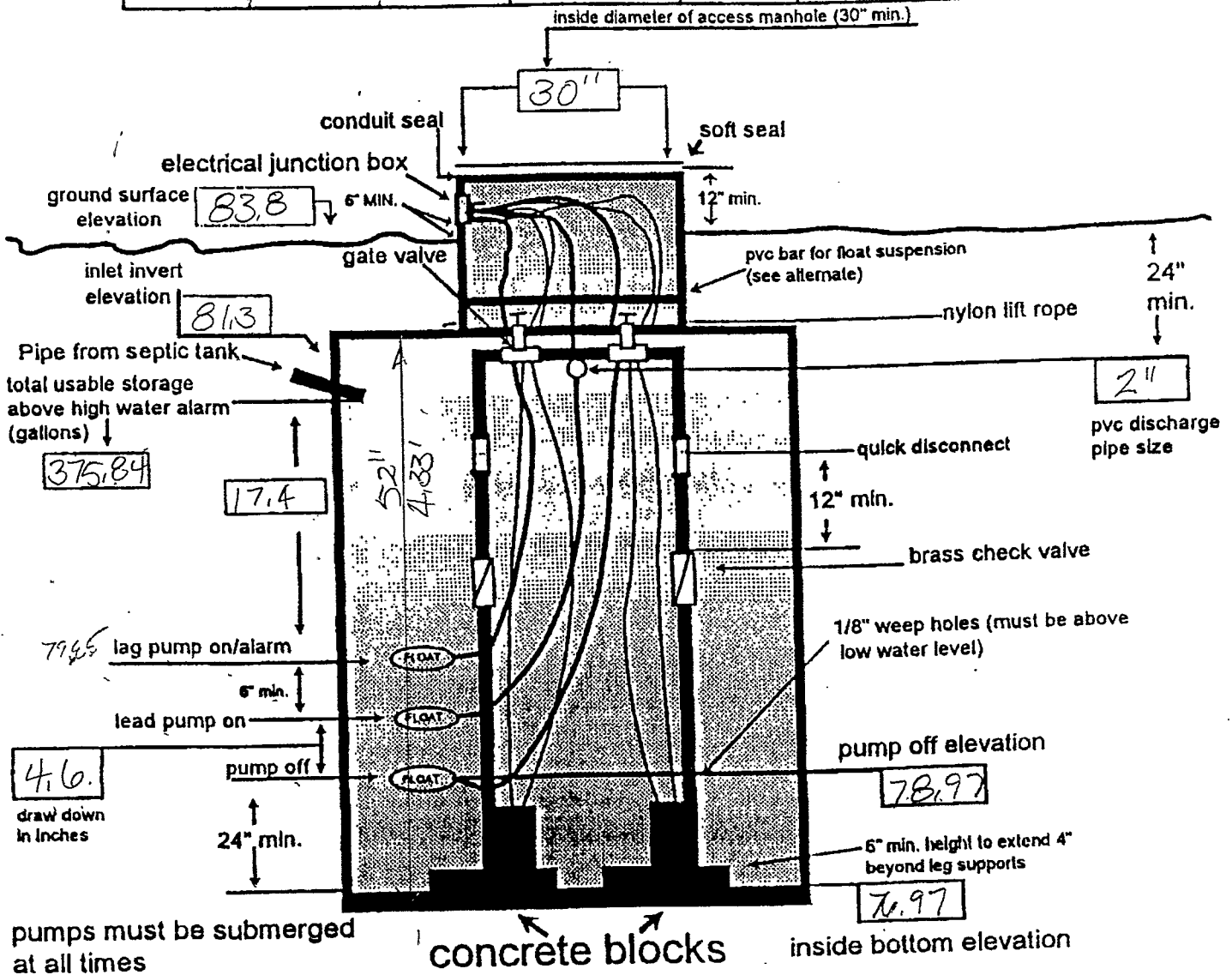
#2 Make ZGELLER Model # 163
2060 g.p.m. at 20 feet TDH
115 volts 1 phase 1/2 horsepower

Make: WATERGUARD Model # TACT II OR EQUAL
115 volts 1 phase 1/2 max. horsepower

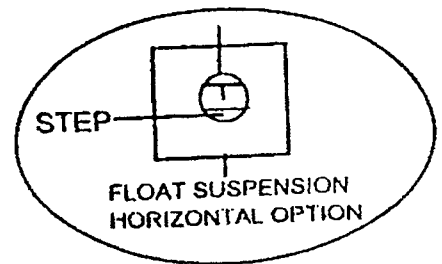
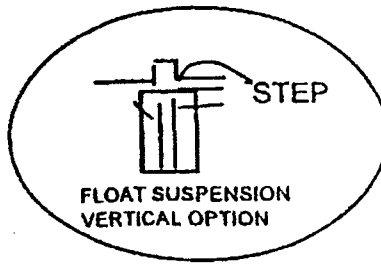
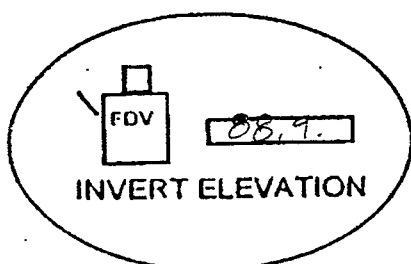
15. Control Panel:



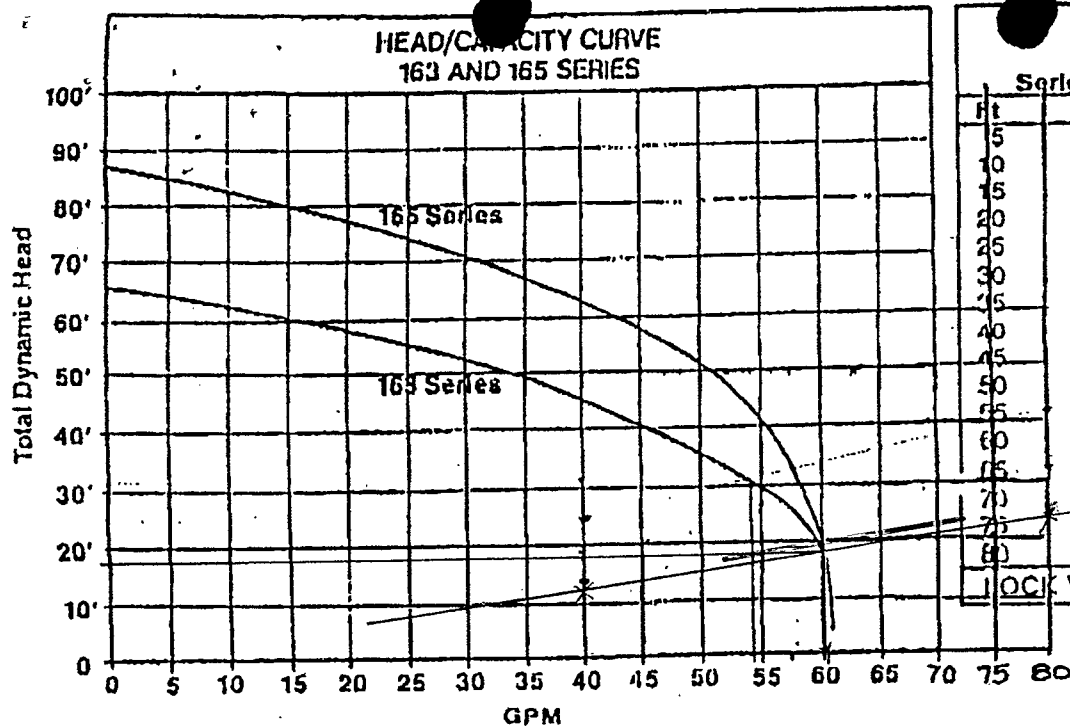
GALLONS	INSIDE DIMENSIONS (INCHES)			GAL/IN	MANUFACTURER
	LENGTH	WIDTH	LIQ. DEPTH		
1125	91	51	52	21.6	TAPP.



pumps must be submerged at all times



NOTE: FLOATS MUST BE INSTALLED AS NOT TO BE DISTURBED BY WASTEWATER ENTERING THE TANK



**Total Dynamic Head/
Capacity Per Minute**

Series	163		165	
	Ft	M	Gal	Ltrs
5	1.52	61	231	61
10	3.06	61	231	61
15	4.57	60	227	60
20	6.10	59	223	60
25	7.62	57	216	59
30	9.14	55	208	58
35	10.67	50	189	57
40	12.19	46	174	55
45	13.70	40	151	54
50	15.24	33	125	51
55	16.76	25	95	48
60	18.29	15	57	43
65	19.80			37
70	21.34			30
75	22.86			22
80	24.38			14
LOCK VALVE		66'	87'	

CONSULT FACTORY FOR SPECIAL APPLICATIONS

- Three phase pumps are available in 200/208V, 230V, or 460V.
- Electrical alternators, for duplex systems, are available and supplied with an alarm.
- Mechanical alternators, for duplex systems, are available with or without alarm switches.
- Combination starters are available.
- Mercury float switches are available for controlling single and three phase systems.
- Double piggyback mercury float switches are available for variable level long cycle controls.
- Long cords are available in lengths of 25 - 35 - 50 feet.
- Over 130°F. (54°C.) special quotation required.

SINGLE AND THREE PHASE UNITS

163 Series						
Cast Iron	Voltage-Phase		Wt.	H.P.	Amps	Cord Length
M163	115-1Ph	Automatic	75	1/2	14.0	20 ft.
N163	115-1Ph	Non-Auto.	76	1/2	14.0	20 ft.
D163	230-1Ph	Automatic	75	1/2	7.0	20 ft.
E163	230-1Ph	Non-Auto.	75	1/2	7.0	20 ft.
F163	230-3Ph	Non-Auto.	75	1/2	3.0	20 ft.
H163	200/208-1Ph	Automatic	75	1/2	8.2	20 ft.
I163	200/208-1Ph	Non-Auto.	75	1/2	8.2	20 ft.
J163	200/208-3Ph	Non-Auto.	75	1/2	2.2	20 ft.
Q163	460-3Ph	Non-Auto.	75	1/2	1.5	20 ft.

165 Series						
Cast Iron	Voltage-Phase		Wt.	H.P.	Amps	Cord Length
Q165	230-1Ph	Automatic	80	1	9.0	20 ft.
E165	230-1Ph	Non-Auto.	80	1	9.0	20 ft.
F165	230-3Ph	Non-Auto.	80	1	3.0	20 ft.
H165	200/208-1Ph	Automatic	80	1	10.7	20 ft.
I165	200/208-1Ph	Non-Auto.	80	1	10.7	20 ft.
J165	200/208-3Ph	Non-Auto.	80	1	3.0	20 ft.
Q165	460-3Ph	Non-Auto.	80	1	1.5	20 ft.

Single phase 1 H.P. units are controlled by a float switch through a relay enclosed in the switch case. Three phase units require a control switch to operate an external magnetic or combination starter.

For information on additional Zoeller products refer to catalog on Combination Starter, FM-514; Piggyback Mercury Float Switches, FM-477; Electrical Alternator, FM-488; Mechanical Alternator, FM-495; Alarm Package, FM-513; and Sewage Basins, FM-447.

All installation of controls, protection devices and wiring should be done by a licensed and qualified electrician. All electrical and safety codes should be followed in addition to the most recent National Electric Code (NEC) and the Occupational Safety and Health Act (OSHA).

RESERVE POWERED DESIGN

For unusual conditions a reserve safety factor is an engineered/design part of every Zoeller pump.

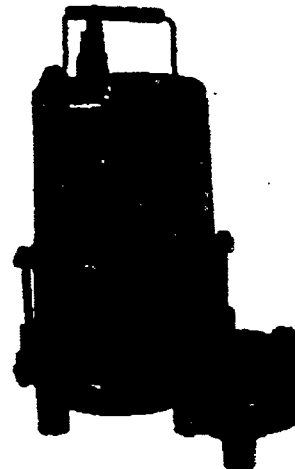
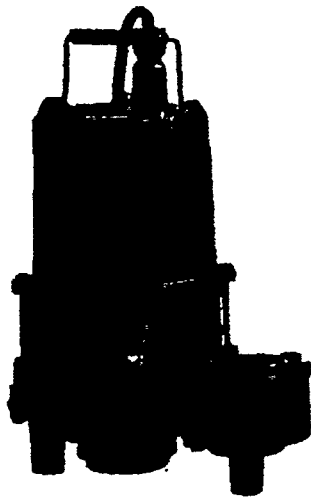


3280 Old Millers Lane
P.O. Box 18347
Louisville, Kentucky 40216
(502) 778-2731

Manufacturers of . . .

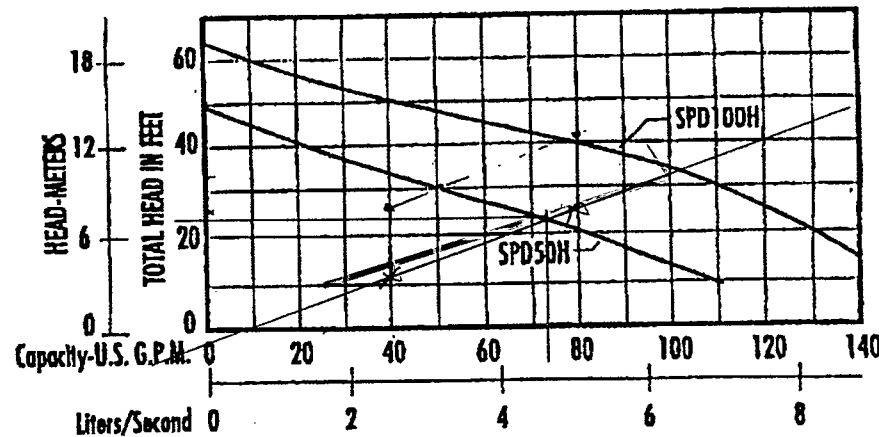
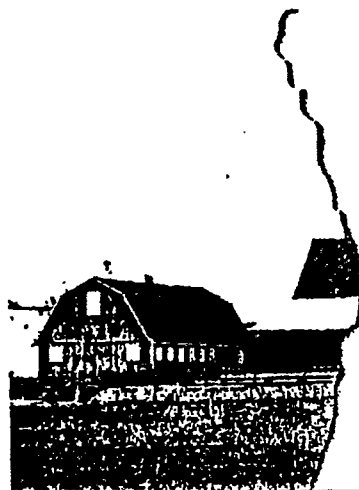
Quality Pumps Since 1939

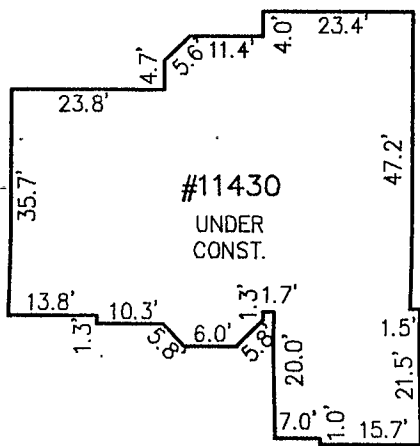
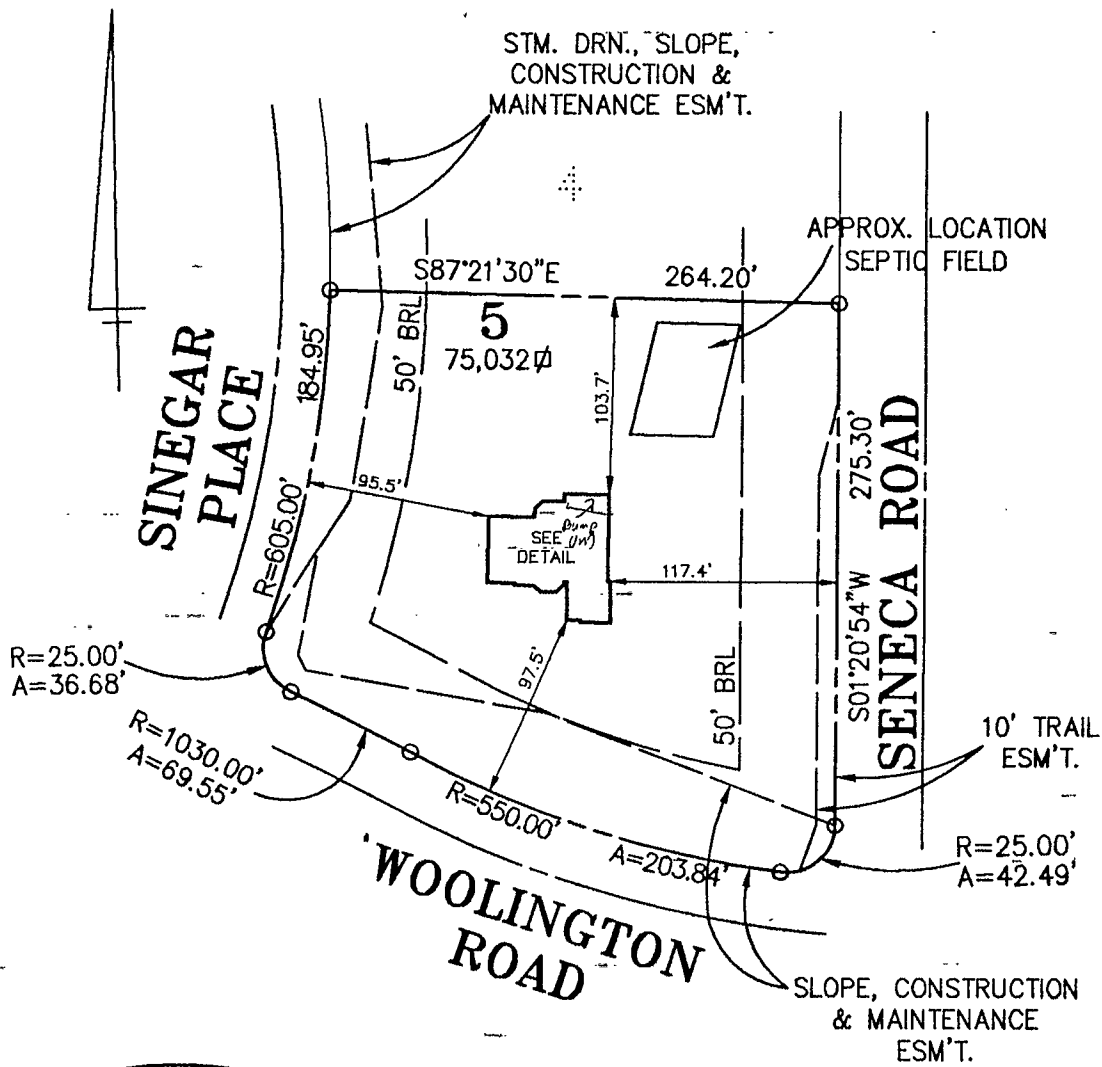
ATTACH TO PUMP (SEE FIG.)



SPD50H	
Typical Application*	Effluent and Dewatering
Capacities	to 112 GPM (7.1 l/s)
Heads	to 50 ft (15.2 m)
Electrical	115V, 1ø, 1.4FLA, 60Hz; 230V, 1ø, 7.0FLA, 60Hz; 200V, 3ø, 3.6FLA, 60Hz; 230V, 3ø, 3.5FLA, 60Hz; 460V, 3ø, 1.8FLA, 60Hz; 575V, 3ø, 1.6FLA, 60Hz
Motor	(single phase) - 1/2HP Split phase w/ solid state switch, start capacitor and thermal overload protection, 3450 RPM; (three phase) - 1/2HP polyphase, 3450 RPM
Minimum Recommended Sump Diameter	Simplex = 24" (609.6mm)
Automatic Operation	Duplex = 36" (914.4mm)
Materials of construction	Class 30 cast iron
Impeller	Class 30 cast iron, two vane non-clog
Discharge Size	2" (50.8mm); 3" (76.2mm) optional
Solids handling	3/4" (19.1 mm)
Power cord	1ø (without seal failure probe) - 10', STW; STW-A (20' optional); 1ø (with seal failure probe) & 3ø - 20', STW-A
Superior Features	• Two (2) carbon/ceramic type 21 mechanical seals mounted in tandem • Oil filled motor w/ automatic reset thermal overload for maximum protection • Upper & lower ball bearing construction • Piggy-back plug available for easy maintenance and replacement (automatic models only) • Seal failure probe warns of seal leak (optional) • Capacitor start for increased starting torque

SPD100H	
Typical Application*	Effluent and Dewatering
Capacities	to 140 GPM (8.8 l/s)
Heads	to 65 ft (19.8 m)
Electrical	230V, 1ø, 9.7FLA, 60Hz; 200V, 3ø, 5.5FLA, 60Hz; 230V, 3ø, 4.0FLA, 60Hz; 460V, 3ø, 2.5FLA, 60Hz; 575V, 3ø, 2.5FLA, 60Hz
Motor	(single phase) - 1HP Split phase w/ solid state switch, start capacitor and thermal overload protection, 3450 RPM; (three phase) - 1HP polyphase, 3450 RPM
Minimum Recommended Sump Diameter	Simplex = 24" (609.6mm)
Automatic Operation	Duplex = 36" (914.4mm)
Materials of construction	Wide-angle float switch (single phase only) (manual available)
Impeller	Class 30 cast iron
Discharge Size	Class 30 cast iron, two vane non-clog
Solids handling	2" (50.8mm); 3" (76.2mm) optional
Power cord	3/4" (19.1 mm)
Superior Features	1ø (without seal failure probe) - 20', STW-A; 1ø (with seal failure probe) & 3ø - 20', STW-A • Two (2) carbon/ceramic type 21 mechanical seals mounted in tandem • Oil filled motor w/ automatic reset thermal overload for maximum protection • Upper & lower ball bearing construction • Piggy-back plug available for easy maintenance and replacement (automatic models only) • Seal failure probe warns of seal leak (optional) • Capacitor start for increased starting torque





DETAIL SCALE
1" = 30'

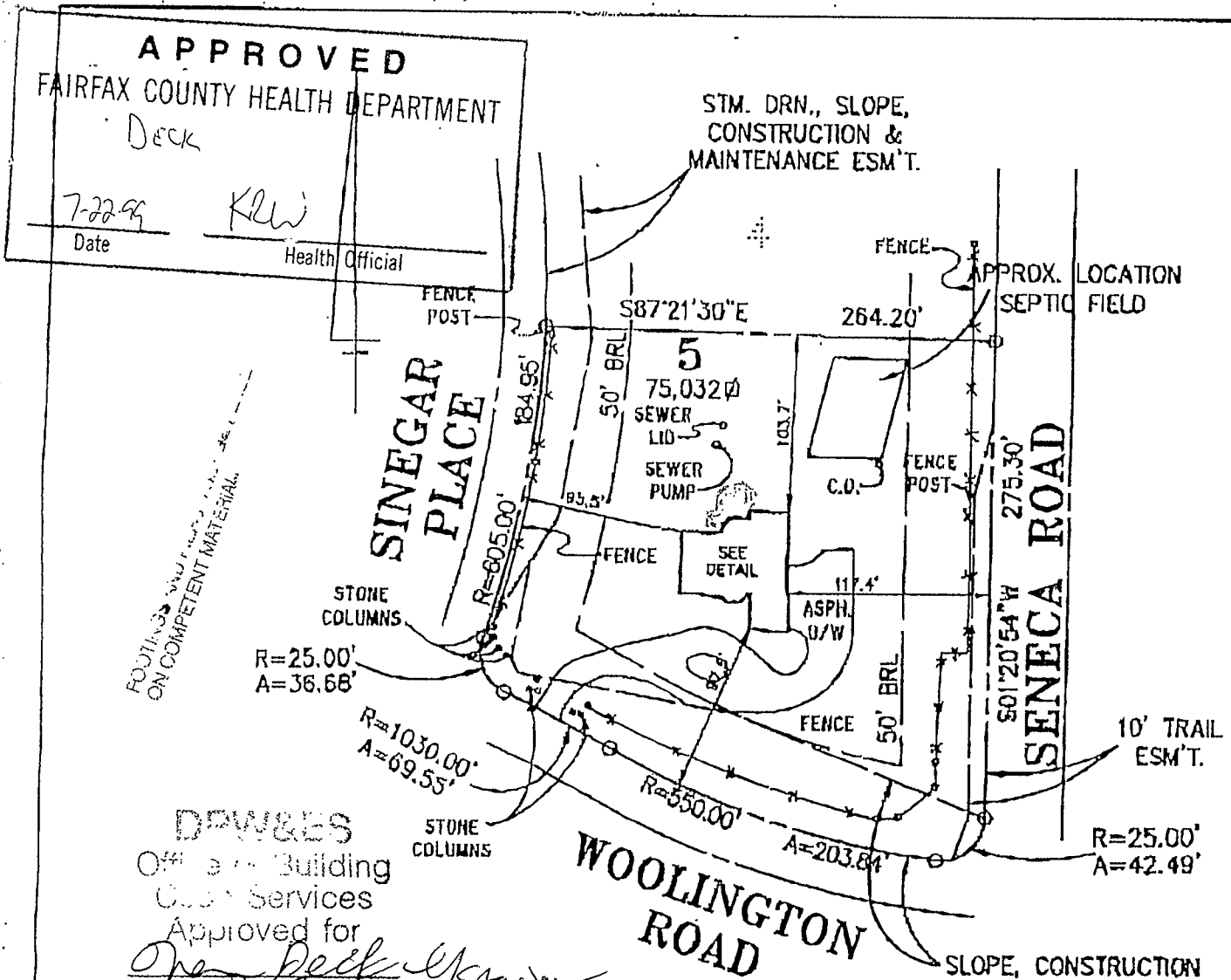
HOUSE LOCATION SURVEY
LOT 5
SECTION 12A
CASCADES
SUGARLAND RUN ELECTION DISTRICT
LOUDOUN COUNTY, VIRGINIA



THE PROPERTY SHOWN HEREON IS LOCATED IN A
ZONE C FLOOD DESIGNATION AND IS SUBJECT TO
MINIMAL FLOOD

THIS HOUSE LOCATION SURVEY HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT
PURPORT TO REFLECT ALL EASEMENTS, ENCUMBRANCES OR OTHER CIRCUMSTANCE AFFECTING THE TITLE TO
THIS PROPERTY.
THIS SURVEY IS NOT INTENDED TO BE USED AS AN AID FOR THE CONSTRUCTION OF FENCES OR OTHER
IMPROVEMENTS.

SCALE:	1" = 100'	URBAN ENGINEERING & ASSOC., INC.	
DATE:	12-1-98		
DRAWN BY:	CJH	CIVIL ENGINEERS	LANDSCAPE ARCHITECTS
WALL CHECK:	11-28-98	7712 LITTLE RIVER TURNPIKE	
RECERTIFICATION:	FINAL LOC.:	ANNANDALE, VIRGINIA 22003	
		(703) 642-8080	
		LAND SURVEYORS	



DRW&ES
Office Building
Civil Services
Approved for
By [Signature]
Date 7/21/99

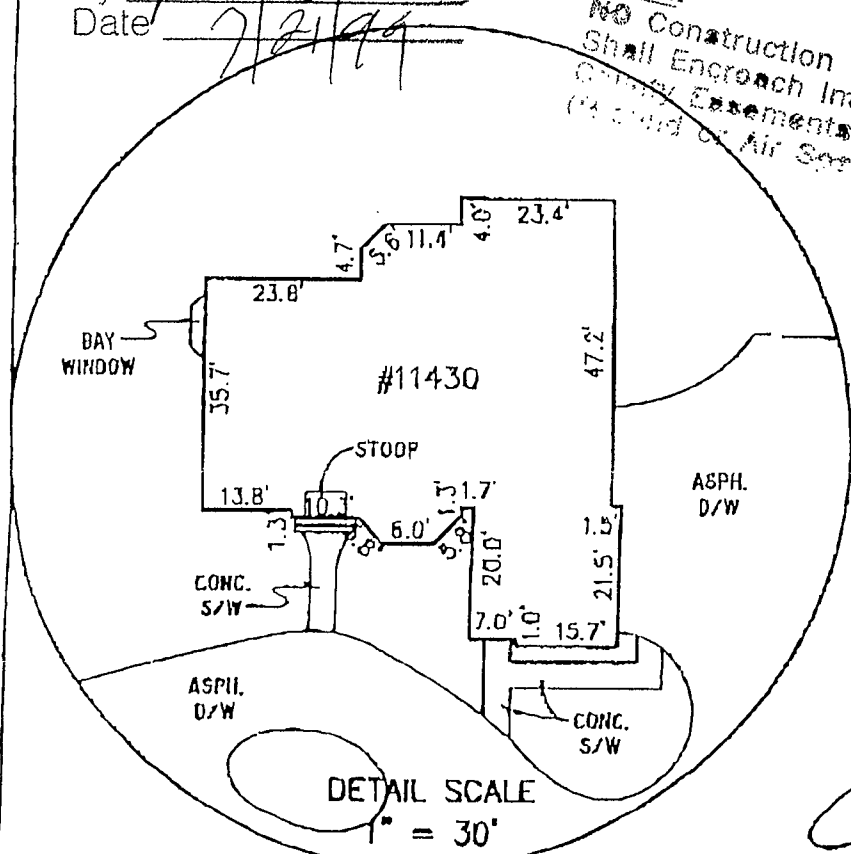
NOTE:
NO Construction
Shall Encroach Into
City Easements
(Paved or Air Space)

SLOPE, CONSTRUCTION & MAINTENANCE ESM'T.

APPROVED

7-21-99
[Signature]
Planning Administrator

HOUSE LOCATION SURVEY
LOT 5
SECTION 12A
CASCADES
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA



THE PROPERTY SHOWN HEREON IS LOCATED IN A ZONE C FLOOD DESIGNATION AND IS SUBJECT TO MINIMAL FLOODING.

THIS HOUSE LOCATION SURVEY HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO REFLECT ALL EASEMENTS, ENCUMBRANCES OR OTHER CIRCUMSTANCE AFFECTING THE TITLE TO THIS PROPERTY.

THIS SURVEY IS NOT INTENDED TO BE USED AS AN AID FOR THE CONSTRUCTION OF FENCES OR OTHER IMPROVEMENTS.

COMMONWEALTH OF VIRGINIA
PHILLIP A. BLEVINS
CERTIFICATE No. 1384
LAND SURVEYOR
12-1-98
FINAL 3-26-99

1958

STM. DRN., SLOPE,
CONSTRUCTION &
MAINTENANCE ESM'T.
DB. 10870 PG. 1782

SINEGAR PLACE

N87°21'30"W 264.20'

5

75,032 ϕ

50' BRL
DB. 10870 PG. 1782

CONC.
SEW. LID
SEW.
PUMP

31.61m
(103.7')

C.O.

APPROX. LOCATION
SEPTIC FIELD

SENECA ROAD

N01°20'54"E 275.30'

10' TRAIL
ESM'T.
DB. 10870 PG. 1782

R=25.00'
A=42.49'

SLOPE, CONSTRUCTION
& MAINTENANCE
ESM'T.
DB. 10870 PG. 1782

FINAL APPROVAL
R=1030.00'
A=69.55'

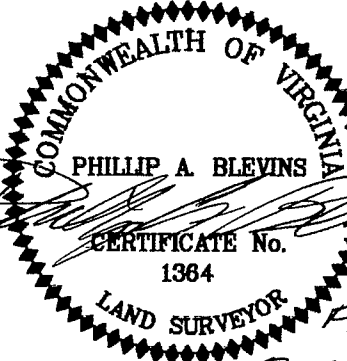
DEC 8 1992

ZONING ADMINISTRATION DIVISION
DEPARTMENT OF PLANNING AND ZONING

WOOLINGTON
ROAD

HOUSE LOCATION SURVEY
LOT 5
SECTION 12A
CASCADES
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

estates



W.C. 12-1-98
FINAL 3-26-99
RE PLOTTED 11-12-99

THIS HOUSE LOCATION SURVEY HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT
PURPORT TO REFLECT ALL EASEMENTS, ENCUMBRANCES OR OTHER CIRCUMSTANCE AFFECTING THE TITLE TO
THIS PROPERTY.
THIS SURVEY IS NOT INTENDED TO BE USED AS AN AID FOR THE CONSTRUCTION OF FENCES OR OTHER
IMPROVEMENTS.

SCALE: 1" = 50'

DATE: 12-1-98

DRAWN BY: J. HARD

WALL CHECK: 11-28-98 FINAL LOC.: 03-24-99

RECERTIFICATION:

URBAN ENGINEERING & ASSOC., INC.

CIVIL ENGINEERS LANDSCAPE ARCHITECTS LAND SURVEYORS
7712 LITTLE RIVER TURNPIKE
ANNANDALE, VIRGINIA 22003
(703) 642-8080

**FAIRFAX COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH**

Approval of plat plan only. This is not a permit to install a water supply or a sewage disposal system. All existing or proposed underground utility lines and easements must be located at a minimum of 12 feet from all subsurface disposal systems. All subsurface disposal systems may be in the roadway or easement. All water service lines must be located at a minimum of 10 feet from all subsurface disposal systems.

7/2/88

Date

Health Official

LOT 5

75.0320

LIMITS OF CLEAR

50 B.R.L. PROP. STM. ORN. & MAINTEN.

SEPTIC FIELD LIMITS

RF=395.10
BF=385.10
GRAND CALAIS (REV.)
3 CAR GAR.
82.81
11430

(RESERVE)
3 • 60" LINES
2' TRENCHES 6' O.C.
IE=875
(RESERVE)
3 • 60" LINES
2' TRENCHES 6' O.C.
IE=885

FOR • 48" 4BR
6' O.C. 2' TRENCHES
(6+4 RESERVE
10-TOTAL)

58R
20 RATE @ 64"

EX. FENCE TO BE REMOVED

RTE. 602

350' HORIZONTAL SIGHT DISTANCE
CEA VA. 75 PROP. RF-1-8-G (75)

MOGORDOM

GRASS

ZONE RE

USE: SINGLE FAMILY DWELLING